WHAT IS CLAIMED IS:

1. An underinflation detector for a four-wheeled vehicle comprising:

a driving direction sensor that detects a direction of movement of the vehicle and outputs a detected value as a first value of a parameter related to the direction of movement of a vehicle;

a rotational speed sensor that detects rotational speeds of two front wheels and two rear wheels of the vehicle; and

a controller that determines from outputs of the driving direction sensor and the rotational speed sensor whether inflation pressure of a tire of any of the wheels has decreased, wherein the controller obtains the first value of the parameter from the driving direction sensor, calculates a second value of the parameter from a difference between rotational speeds of the front wheels, calculates a third value of the parameter from a difference between rotational speeds of the rear wheels, calculates a rate of change of deviation of the second value from the first value with respect to change of vehicle speed by the least-squares method, calculates a rate of change of deviation of the third value from the first value with respect to change of the vehicle speed by the least-squares method, and if at least one of the rates of change of deviation exceeds a prescribed threshold, determines that inflation pressure of a tire of at least one of the wheels has decreased.

2. An underinflation detector according to claim 1, wherein the deviations are modified by being weighted by normalized values of indicators of straight-ahead driving of the vehicle and taking moving averages thereof before the rates of change of the deviation are calculated with respect to change of the vehicle speed by the least-squares method.

3. An underinflation detector according to claim 1, wherein the parameter related to the direction of movement of the vehicle is one selected from the group consisting of a yaw rate, a steering angle, and a lateral acceleration.

4. A sensor output correcting method using the underinflation detector according to claim 1, comprising the steps of:

calculating a first offset value of outputs of the driving direction sensor from a relation obtained by the least-squares method between the deviation of the second value from the first value and the vehicle speed;

calculating a second offset value of the outputs of the driving direction sensor from a relation obtained by the least-squares method between the deviation of the third value from the first value and the vehicle speed; and

obtaining from the first offset value and the second offset value a correction value to be added to the outputs of the driving direction sensor.